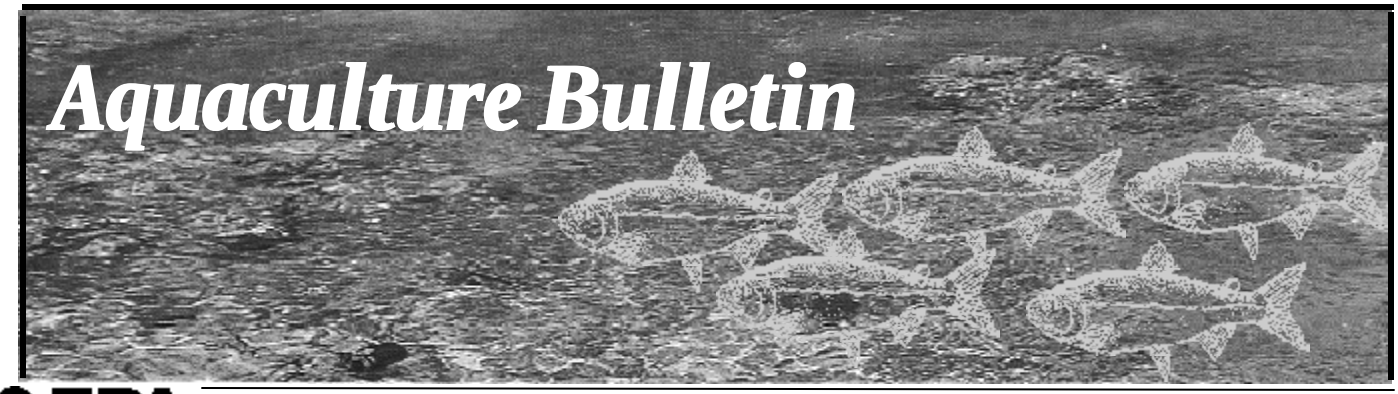
Aquaculture Bulletin



U S ENVIRONMENTAL PROTECTION AGENCY REGION 10 February 2000

We would like to introduce EPA's ***Aquaculture Bulletin***. This bulletin will tell you about the upcoming National Pollutant Discharge Elimination System (NPDES) general permits for all aquaculture facilities in Alaska and for Tribal and federal aquaculture facilities in Washington. It explains why EPA is issuing these permits and tells you how you can get involved in the permitting process. This is the first in a two-part set of bulletins we plan to send out before the permits are issued this summer. This edition contains articles about hatcheries in Alaska and Washington, and the general permit that we have already issued for Idaho aquaculture facilities. The second issue of the Bulletin will focus on EPA's aquaculture permit strategy and the three new general permits. We are planning to hold workshops and public hearings for the general permits in June. Stay tuned for more information in the next ***Aquaculture Bulletin***.

The National Pollutant Discharge Elimination System (NPDES) is a permitting system for wastewater discharge under the federal Clean Water Act (CWA). The CWA governs pollution discharges to the nation's surface waters. NPDES permits set limits on the types and amounts of pollutants that industries and municipalities can release into our waterways. "Waterways" refers to streams, rivers, canals, ponds, lakes, wetlands, estuaries, and coastal seas out to 200 miles.

In This Issue:

Upcoming Aquaculture Teleconferences

Come talk to EPA Region 10 staff about:

- what works and what doesn't in the permit you have
- discuss ideas from other aquaculture general permits

Federal Facilities in Washington - **(206) 553-4557**
Tuesday, March 28, 2000
10:00 - 11:30 P.S.T.
7th Floor Education Center, Region 10

Tribes in Washington - **(206) 553-4557**
Wednesday, March 29, 2000
10:00 - 11:30 P.S.T.
Room 15 Denali, Region 10

All Facilities in Alaska - **(206) 553-4602**
Thursday, March 30, 2000
10:00 - 11:30 P.S.T.
Room 15 Denali, Region 10

Hatchery Operations in Washington and Alaska

The freshwater and saltwater rearing of trout and salmon in fish hatcheries is an important enterprise in Washington and Alaska. Our information on the number of hatcheries is incomplete. In Alaska, according to information in EPA Region 10's database, there are 9 state facilities, 2 tribal facilities, and 10 privately-owned commercial facilities. In Washington there are 89 state facilities, 15 tribal facilities, 15 federal facilities and 26 private facilities. We need your help to update this information during this permitting process.

Hatcheries can serve two purposes:

- enhancement hatcheries supply fish to promote sport and commercial fishing.
- conservation hatcheries replenish wild stocks of fish.

The design of hatcheries reflects the two major phases in raising salmon. The first is the freshwater life-stage, which lasts from six months to two years. Fish are reared in raceways, a series of tanks through which water flows continuously. The second stage begins when salmon reach the smolting stage and need a saltwater environment. Fish are generally released at this stage. Some coho salmon are reared past the smolt stage in floating netpens anchored to the sea floor in coastal areas. These are called "recovery" pens as they increase the survival rates of the smolts before release. Depending on its size and the amount of feed used, a facility, whether saltwater or freshwater, may be required to have an NPDES permit.

A Raceway System

Environmental Effects of Hatcheries

The wastewater discharged from hatcheries is contaminated. Hatchery waste products include:

- uneaten food,
- fish feces,
- nutrients (especially phosphorus),
- algae,
- parasites,
- drugs and other chemicals.

Solid and liquid pollutants are byproducts of raising fish in concentrations within a confined facility. Although both fish and their wastes occur naturally in free-flowing systems, their unnaturally high concentrations from fish raised in a concentrated setting can pose environmental problems. When flushed into waterways, the solids can settle beneath or downstream of the facility. These solids also increase turbidity of streams, decrease oxygen in water, and add nutrients. The rich nutrients, phosphates, and nitrates encourage the explosive growth of algae. This changes the habitat and consumes oxygen in the water that other fish and plants need to survive. Chemicals used to treat fish for parasites, as well as other drugs and chemicals used in aquaculture, also flow into downstream waters.

Discharge from a Hatchery: The River Flows Through it and Picks Up Some Fish Wastes

Who Must Have a Permit?

The NPDES permit is designed to protect water quality and habitat. In order to protect the environment and its aquatic communities, aquaculturists need to understand and comply with NPDES permits.

The U.S. Environmental Protection Agency (EPA) issues NPDES permits to federal and tribal aquaculture facilities in Washington and all aquaculture facilities in Alaska, and is planning to issue three general permits for these facilities rather than individual permits. These permits apply to facilities which exceed 20,000 pounds of fish production per year or 5,000 pounds of fish food used per month. The State of Washington issues aquaculture permits to privately-owned and state-owned facilities in Washington.

Aquaculture in Idaho: A New General Permit

In September 1999, EPA issued an NPDES general permit for all aquaculture facilities in Idaho. The hatcheries and fish farms permitted under the Idaho general permit include state, federal, tribal, and private facilities. Of a total of 110 facilities, 94 are private hatcheries, in the business of raising trout, catfish, carp, tilapia, and sturgeon for food. There are thirteen state facilities and three federal facilities, which raise salmon, steelhead, and trout for conservation purposes.

Under federal law, a general NPDES permit covers "a category of dischargers within a geographic area." EPA has the authority to determine which groups of facility-dischargers within which geographic areas are classified as a category ("sector") for regulation under a general permit. For example, within EPA Region 10 (Idaho, Oregon, Washington, and Alaska), general permits have been issued for sectors like placer mines, oil and gas facilities, and seafood processors. All facilities under a general permit must comply with the NPDES permit. These facilities face the same problems and can work together to solve them to help improve the environment. EPA decided a general permit was the best choice for aquaculture facilities in Idaho, and plans to issue general permits in Alaska and Washington. Some of the highlights of the Idaho general permit are:

Reducing nutrient (especially phosphorus) discharges to surface waters. New permit limits will help control plant and algae growth caused by too much phosphorus. EPA believes that this permit will reduce pollution from nutrients, algae, uneaten food, and fish wastes. This will support cleaner lakes, rivers and streams, healthy fish communities, and improved recreational uses of these waters.

Recognizing individual differences among aquaculture facilities. Under the Idaho general permit, facilities are classified by size. All facilities monitor for total phosphorus, total suspended solids, and settleable solids, among other limits. Larger facilities perform different types of monitoring, as well as more intensive monitoring. Facilities producing more than one million pounds of fish per year monitor weekly, while facilities producing less than 100,000 pounds per year monitor quarterly for one year and annually thereafter. The reasoning behind this is that larger facilities are responsible for more pollution than smaller ones. Larger facilities can also more easily afford monitoring costs.

EPA is talking with the Idaho permittees to ensure that permit requirements and conditions are met. EPA is also working with facilities that may not fit into the categories defined in the general permit to assist them in finding ways to reach the permit discharge limits. In some cases, this may require issuing site-specific individual permits for a facility.

Requiring Best Management Practices (BMPs). How a facility is operated determines the amount of wastes generated. Facilities that use best management practices like reducing excess fish feed and chemical use will generate less waste. EPA worked closely with Idaho's facility owners, operators, and other stakeholders throughout the permitting process on this issue. The general permit has "goal-based" requirements for its best management practices. Idaho aquaculture facilities can decide:

- how to control selecting and providing fish feed.
- what chemicals are used on the fish.
- how to collect and treat waste solids.

Record-keeping Requirements

The Idaho general permit requires facilities to keep a detailed record log of production and monitoring information on site. Chemicals used to rid fish of parasites ("therapeutants") and decontaminant pollutants may be harder to measure than the familiar conventional pollutants like settleable solids, but are still present in more diffuse concentrations and can harm the ecosystem. The general permit for Idaho aquaculture facilities requires that inventories of chemical use be kept. If this inventory indicates that toxic or hazardous chemicals are being applied in amounts which could reasonably harm aquatic life, then the permit requires the permittee to conduct whole effluent toxicity (WET) tests. A WET test measures the combined effect of all toxics in the discharge.

Areas Excluded from the Idaho General Permit

The Idaho general permit does not allow discharges into protected water resources and special habitats, such as 100 yards upstream of a National Park or Preserve, a National Wildlife Refuge, or a National Wilderness Area. Discharges into waters with certain threatened and endangered species are also excluded under this permit. If a facility wishes to discharge to an excluded area, the owner/operator can get a waiver if EPA, the Idaho Division of Environmental Quality, Tribes, and other stakeholders determine that their proposed discharge will comply with all laws and regulations which apply.

EPA's general NPDES permit for Idaho aquaculture facilities is one foundation for developing permits for all facilities in Alaska and for tribal and federal facilities in Washington. You can view it and download it from EPA Region 10's website at **epa.gov/r10earth/**.

Mailing List Update

Please include me on the ***Aquaculture Bulletin*** mailing list with the following corrections/revisions:

Name: _____

Organization: _____

Address: _____

City/State/Zip: _____

Affiliation (optional): _____

E-mail (Optional): _____

Please return this form to:

Aquaculture Bulletin, EPA ECO-081, 1200 6th Ave., Seattle, WA 98101

EPA strives to provide you with useful environmental information. Please feel free to call, write or e-mail us to let us know how we can improve our materials to suit your needs. You can e-mail:

Debra Packard at **packard.debra@epamail.epa.gov.**

Who Can I Call For More Information?

Burney Hill, NPDES Permit Writer
at **(206) 553-1761**

Debra Packard or Maryann Helferty, Community Involvement Coordinators
at **(206) 553-0247**

You may also call our toll free number:
1-800-424-4372

To ensure effective communication with everyone, additional services can be made available to persons with disabilities by contacting one of the numbers above.
You may also find more information on EPA Region 10's website. Check out our homepage at:
http://www.epa.gov/r10earth

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